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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,204	01/16/2004	Hideki Higashimura	2004-0058	4883

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EXAMINER

LAM, CATHEY PONG FONG

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/758,204

Applicant(s)

HIGASHITANI, HIDEKI

Examiner

Cathy Lam

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/420,876.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

2. Claims 1, 3-7, 9-19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hagashi (US 6359235).

Hayashi discloses an electronic device mounting wiring board and a method of making such.

The wiring board is made by the steps of drilling via holes (2) in an insulation sheet (1), wherein the insulation sheet is not cured (or is in B-stage) (col 5 L 23-25 & col 4 L 58-59). The via holes (2) are filled with an electrically conductive paste.

A transfer film (5) (or carrier) having a wiring layer (4) formed on the surface of the transfer film (5), is contact bonded onto the insulation sheet (1) with press, thereby transferring the wiring layer (4) onto the surface of the insulation sheet (1) (col 5 L 35-38). Then removing the transfer film (5) (Fig. 1E).

Hayashi emphasizes that the single layer wiring sheet i.e. after the wiring layer (4) has formed onto the insulation layer (1), remains in B-stage (or uncured) (col 5 L 53-58).

In another aspect of Hayashi's invention, a cavity (6) is formed for housing a electrical device. The cavity is formed in the insulation layers (1), such that a wafer with conductive posts (14), is placed within. A soft resin (15 or 16) is used to filled around the wafer in the cavity (col 8 L 23-30 & L 5-10, & col 9 L 30-35).

A laminate can be formed by stacking a plurality of single layer wiring sheet and the insulation layers with the electrical device embedded.

Finally, a wiring circuit layer (21) is formed on the surface of the transfer film (20) is press bonded onto the front and back surface of the laminate (col 9 L 36-43 & Fig. 6D).

The transfer film (20) is then removed. A final curing step is performed onto the laminate (col 9 L 40-47).

Hayashi teaches the steps of making a multilayer wiring board having an electrical device embedded. The prior art steps meet what is claimed by the applicant.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 6359235).

Hayashi teaches a method of making a multilayer wiring board.

Hayashi however is silent about the surface condition of the electrical insulating substrate.

Without any detail descriptions of the convexities, it would have been obvious that the prior art insulation layer(s) would have some kind of concave/convex structure

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(microscopically) on the surface because unless deliberately made smooth, all materials don't have a perfectly flat or smooth surface.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cathy Lam
Primary Examiner
Art Unit 1775

cfl
May 24, 2004